

CLAIMS

I claim:

1. A device for reconditioning a damaged sports surface, the device
5 comprising;
 - at least one rotatably driven shaft having a first end and a second end, the first end being connected to a frame and the second end being disposed towards the surface, the driven shaft being disposed orthogonal relative to the surface; and
 - 10 - a work head connected to the second end, the work head being in contact with the surface and rotated relative thereto by the driven shaft so as to recondition the surface.
2. The device, according to claim 1, in which the work head includes at
15 least two work head shafts connected to the second end of the driven shaft.
3. The device, according to claim 2, in which the work head includes three work head shafts connected to the second end of the driven shaft.
- 20 4. The device, according to claim 3, in which the work head shafts are radially disposed and equidistant from each other.
5. The device, according to claim 4, in which each of the work head shafts include at least one surface contact wheel freely rotatably connected to a shaft
25 end portion.

6. The device, according to claim 5, in which each of the work head shafts include two spaced apart surface contact wheels that are freely and independently rotatably connected to the shaft end portions.

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7. The device, according to claim 6, in which the driven shaft has a generally vertical axis of rotation and the surface contact wheels each have an axis of rotation generally orthogonal to the axis of rotation of the driven shaft.

10 8. The device, according to claim 7, in which the surface contact wheels include a plurality of circumferentially disposed teeth.

9. The device, according to claim 8, in which the teeth have smooth rounded edges.

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10. The device, according to claim 1, in which the frame includes a first longitudinal beam, a second longitudinal beam, two side beams and a central beam, the side beams and the central beam being connected to the first and second longitudinal beams to define a work space therebetween.

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11. The device, according to claim 10, in which the frame includes a first group of three driven shafts, the first group including one driven shaft connected to the first longitudinal beam and two spaced apart driven shafts connected to the second longitudinal beam.

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12. The device, according to claim 11, in which the frame includes a second

group of three driven shafts adjacent the first group, the second group including two spaced apart driven shafts connected to the first longitudinal beam and one driven shaft connected to the second longitudinal beam.

5 13. The device, according to claim 12, in which the frame includes a third group of three driven shafts adjacent the second group, the third group being arranged the same as the first group.

10 14. The device, according to claim 13, in which the first, second and third groups of driven shafts are disposed such that their respective work heads are arranged in alternating triangular patterns.

15. The device, according to claim 14, in which the driven shafts are coaxial and are driven in opposite directions.

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16. The device, according to claim 15, in which the driven shafts are driven by a drive mechanism connected to an upper part of the frame.

20 17. The device, according to claim 16, in which the drive mechanism includes:

- a main drive wheel connected to a pinion wheel, each being connected to a drive wheel shaft, the drive wheel shaft being connected to the frame;
- a drive wheel connected to the first end of each driven shaft, the first end
25 being rotatably connected to their respective longitudinal beams;
- a belt interconnecting each of the drive wheels to the pinion wheel; and

- a prime mover connected the main drive wheel to drive the drive mechanism.

18. The device, according to claim 17, in which an extension member is
5 connected to the frame, the extension member having therein a slot, the drive wheel shaft being adjustably mounted in the slot so as to adjust the position of the drive wheel shaft relative to the frame.

19. The device, according to claim 10, in which the frame further includes
10 four wheels rotatably connected to a crank mechanism, the crank mechanism being operable to retract or extend the wheels relative to the sports surface so as to move the work heads relative to the sports surface.

20. The device, according to claim 19, in which the frame is connected to a
15 front end of a wheeled vehicle, the vehicle being movable across the sports surface.

21. The device, according to claim 1, in which the sports surface is an
artificial surface.

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22. The device, according to claim 21, in which the artificial surface is
artificial turf.

23. The device, according to claim 21, in which the artificial surface is clay.

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24. A mobile device for reconditioning a damaged artificial sports surface, the device comprising;

- a vehicle having a frame connected to a vehicle front end, the vehicle being movable across the surface;
- 5. - at least one rotatably driven shaft having a first end and a second end, the first end being connected to the frame and the second end being disposed towards the surface, the driven shaft being disposed orthogonal relative to the surface; and
- a work head connected to the second end, the work head being in
10 contact with the surface and rotated relative thereto by the driven shaft so as to recondition the surface as the vehicle moves across the surface.

25. The device, according to claim 24, in which the frame includes a first
15 group of three driven shafts, the first group including one driven shaft connected to the first longitudinal beam and two spaced apart driven shafts connected to the second longitudinal beam.

26. The device, according to claim 25, in which the frame includes a second
20 group of three driven shafts adjacent the first group, the second group including two spaced apart driven shafts connected to the first longitudinal beam and one driven shaft connected to the second longitudinal beam.

27. The device, according to claim 26, in which the frame includes a third
25 group of three driven shafts adjacent the second group, the third group being arranged the same as the first group.

28. The device, according to claim 27, in which the first, second and third

groups of driven shafts are disposed such that their respective work heads are arranged in alternating triangular patterns.

29. The device, according to claim 28, in which the driven shafts are coaxial
5 and are driven in opposite directions.

30. The device, according to claim 29, in which the work head includes at least two work head shafts connected to the second end of the driven shaft.

10 31. The device, according to claim 30, in which the work head shafts are radially disposed and equidistant from each other.

32. The device, according to claim 30, in which each of the work head shafts include two spaced apart surface contact wheels that are freely and
15 independently rotatably connected to the shaft end portions.

33. The device, according to claim 32, in which the driven shaft has a generally vertical axis of rotation and the surface contact wheels each have an axis of rotation generally orthogonal to the axis of rotation of the driven shaft.

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34. The device, according to claim 33, in which the surface contact wheels include a plurality of circumferentially disposed teeth.

35. The device, according to claim 34, in which the teeth have smooth
25 rounded edges.